The Plant Beautiful

BY J. H. PAUL, DIRECTOR OF NATURE STUDY IN THE STATE NORMAL.

OBSERVATIONS FOR THE FOURTH WEEK IN SEPTEMBER

Each grade and, in fact, every interested observer should aim to study at least two examples of the several principal types of "the plant beautiful" among our fall flowering plants, whether native or cultivated. The materials for this observation are abundant and, for the most part, readily accessible in garden, field or canyon. The training school garden of the state normal, for example, contains this year a flower strip about five feet in width and aggregating some sixty rods, or one and a half city blocks, in length, and is a mass of floral beauty throughout its entire extent. This garden was cultivated by the fourth year normal students last spring, and by the children of the several grades under their direction. The plants have thrived to an extraordinary degree, under only moderate care, on the fertile, virgin soil of the tract set apart by the university as the nature laboratory in plant life. I take this occasion to invite any or all of the graduates of last year and the general public also, to pay a visit to the scene of this rather unexpected result of a little systematic effort on the part of the pupils last spring in seed planting. Of course they first prepared the soil, then selected their seeds, then chose a favorable day for planting. Some of them kept the ground weeded and the soil loose on top, while the tiny seedlings were making their first brave struggle. Now the pupils of each grade gather the flowers from the seeds they planted last spring, and their delight in visiting their garden and in observing its varied specimens, particularly those of striking hues and artistic or unique form, is a strong proof of the educational value of this plan of making the child's own work the basis of his nature studies in the school room.

Eighth Grade Oddities.

The Cockscomb (Celosia crista) flowers in the midst of our more showy kinds, though it would have been best as a border. Those we have are red, yellow and pink, but there are also crimson forms at the florist's. If transplanted into open, rich ground, about the time the combs begin to form, the flower heads will be much larger. Bright from midsummer to frost, they present a decided contrast to the ordinary red-root, a pig-weed that is a near relative, growing right beside it. The inconspicuous flowers in the weedy mass that forms the flowering head of the pigweed may be found by the stamens, and then the two plants should be compared as to color, form, flowers and seeds. The use of the red-root in furnishing bird food, especially for the snowbirds in January, should not be overlooked.

Seventh Grade Glories.

In many gardens will be found the glorious color effects of those notable fall bloomers, the cosmos, of which our garden contains several kinds. Bright and bold, yet dainty and airy in aspect, the effect of the brilliant, daisy-like flowers is heightened by the tall stems and the feathery green foliage. The plants will be three or four feet in height if sown in March or April in good soil. The flowers and leaves may be studied like those of the aster previously explained. Zinnias flower profusely in our collection. Strong, rich soil suits them best, and they should have plenty of room; otherwise, as in our crowded flower space, many of them will not have sufficient nutrition to become "double," as in the illustration, though in such case this fact itself is an interesting point for observation and study.

The ageratums in our garden are a dwarf blue that would make a fine border. They seem very thrifty and could probably be raised in any school garden in the state. Sow the seed in the open ground in May for fall bloom. Seed sown in August will produce plants for winter flowering in the school room. These plants (see cut) are neat, bushy, erect, and produce a profusion of pretty, brush-like flowers.

Sixth Grade Gems.

The pansy should be sown very early to secure good spring flowers, and if rain is plentiful the flowers will bloom before school closes. The seed for spring bloom, however, is usually sown in September in rich, moist garden beds, from which the plants are later transplanted to a cold frame, setting them two or three inches apart each way before cold weather begins. In spring three-fourths of them can be lifted out for bedding and the rest left to bloom in the frame. Seed sown in cool, moist places in June and July will give good flowering plants for fall. The colors, the curious stamens, the angled stems, the stipules and the style are the points to observe.

Scarlet sage (Salvia splendens) is first sown in window boxes in March or April, and set outdoors in the last of May. It keeps the garden bright till late in autumn, and makes a strong border of intense color. Ours were not successful this year.

Sweet peas (Lathyrus odoratus) appear to be of easy cultivation, preferably in long rows, climbing over open fences or rabbit wire well supported. They require deep, rich, well tilled soil. At a depth of ten inches should be a layer of rotted manure. The seeds are planted under two inches of soil, in early spring, so that the ground is best prepared in the fall. Study how the bees get covered with pollen when seeking the nectar of the sweet pea, and observe the device which secures this result.

Fifth Grade Regulars.

Our portulacas are mostly single, probably from being too crowded. The double ones shown in the cut are more showy, but ours are better for fifth graders to study—the five deep red petals, the row of curious leafy bracts below the sepals, the numerous stamens, the thick, lustrous and dewy leaves. The garden portulaca, growing here has a little sister creeping in waste places and similar as to flowers and leaves, and the habit both have of carpeting the ground with a mass of succulent foliage that in the forenoon is hidden by gay and brilliant flowers. The seed is sown late—in hot weather, but the plant is extremely hardy, requires almost no care, thrives with little water, and even perpetuates itself. Our verbenas are of several contrasting colors, on long stems and low growing, the flowers borne on lateral shoots so numerous as to form masses of bloom. The five-fold plan of the flowers should be studied by fifth grade pupils. The plants will bloom before school closes in spring if sown in February in a living room; otherwise plant in March in a hotbed, after soaking the seeds a few hours in tepid water. Sow in light, rich soil, one-quarter of an inch deep, press down firmly and water. Transplant in boxes, and finally outside. The verbena has a curious wild relative, a little mat-like plant, each stem radiating from the root and resembling a small roll of rags. The mat is a foot or two in diameter, and is green, but woolly in appearance. It has tiny purple corollas, subtended by large heary bracts. It is Verbena bracteosa, commonly found by the roadsides in our valleys.

Fourth Grade Beauties.

Our California and common poppies are beautiful and very prolific, the golden beds of the former being the most striking feature of our garden. The Eschscholtzia, as it is called, is the state flower of California. It averages a foot in height, has silvery foliage, the flowers bright tinted with yellow and orange, closing gradually in the afternoon, but is in season from early spring until frost. Seeds are sown broadcast and lightly raked in, either in spring or autumn. The common poppy (Papaver somniferum) from whose juice the opium of commerce is prepared, likewise flowers from early spring to frost, and requires similar sowing, but in light, sandy soil, thinly covered. For observation lessons, its bold aspect, brilliant coloring, grace of stem, airiness of poise and delicacy of tissue, fix the attention of pupils almost without effort on the part of the teacher. The curious seed pod, a veritable pepper box, is also a good object of study.

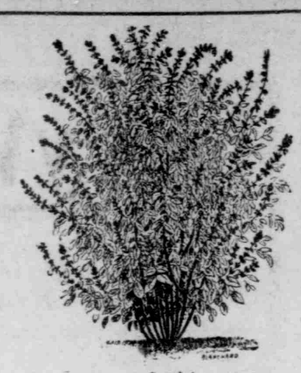
I regret to say that our garden contains no clarkias, the prettiest of hardy, native annuals (excepting the wild columbine) produced by western America. They grow wild in the Sierra Nevadas and bloom freely in gardens.

Our sweet alyssums are bravely flourishing from seeds sown late last spring. By cutting back after the first flowers fade, others will be produced. These flowers are all four-parted and present a conspicuous invitation to fourth grade pupils.

A Third Grade Study.

Typical third grade plants, the water lilies, are lacking in our fall collection. I therefore recommend the castor bean, or castor oil plant (Ricinus) for the third grade to investigate. Ours are now four or five feet high, and may yet reach six feet. The leaves are large and interesting, the foliage itself of several colors, and the general aspect hairy bracts. It is Verbena bracteosa, that of a tropical plant.

The Gladiolus.—This showy fall bloomer is an excellent type for the third grade, because of the bright flower colors and the size, shape and commanding aspect of the plant. Notice the sword-shaped leaves, whence its name from the Latin gladius, a sword, the irregular, six-parted perianth, as the calyx and corolla are termed when both are colored alike; the pistil divided at the top into three slender stigmas; the three large, arrow-like stamens turned away from the pistil on the side that opens to discharge the pollen—a device that insures cross fertilization when the moths or humming birds call to sip the honey. The passage is open down to the nectar in the tube of the flower on the side away from the pistil and facing the anthers so that, as they open and disclose their pollen, the visitor rubs off the pollen in reaching the honey-dew, and this fine dust from the blue-lined anthers is carried away on the hairy body of the bee or moth to another plant whose pistil receives it.



Scarlet sage.

Castor bean.

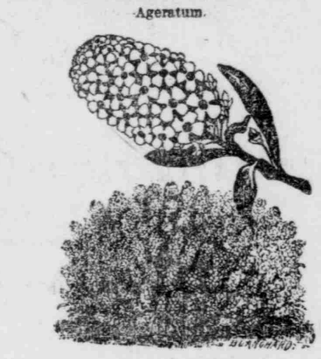
Petunia.

Clarkia.

Cockscomb.

Zinnia.

Verbena



Ageratum.

Alyssum.

California poppy.

Second Grade Splendors.

Dahlias are splendid Mexican species of the easiest cultivation. Ours were planted as tubers last spring by the seventh grade class, and this fall the eighth graders, the same pupils, will harvest the tubers and store them for the winter. These Mexican beauties, either blondes or brunettes, are well suited to our soil and climate, and thrive almost everywhere in city gardens. Let second grade pupils observe their tubular cornucopias and snowball heads, name the various colors and paper-cut the leaf forms.

A First Grade Prize.

Our petunias and morning glories are a fine attraction for first grade pupils, who delight in their delicate and lovely hues, their odd shapes and peculiar behavior. Their long tubes with nectar for the moths and with insects and nectar for the humming birds, are points for special observation.

University of Utah, Sept. 20, 1907.